Global LCD Panel Exchange Center www.panelook.com 屏库:全球液晶屏交易中心

Product Specification

AU OPTRONICS CORPORATION

B141EW04 V4

( ) Preliminary Specifications
(V) Final Specifications

Module	14.1” WXGA Color TFT-LCD
Model Name	B141EW04 V4 (H/W : 2A)

Customer	**Date**	**Approved by**	**Date**
LENOVO		Howard Lee	2008/06/25
Checked & Approved by		**Prepared by**	
		Yingjung Tung	2008/06/25
Note: This Specification is subject to change without notice.		NBBU Marketing Division / AU Optronics corporation	

www.panelook.com

One step solution for LCD / PDP / OLED panel application: Datasheet, inventory and accessory! www.panelook.com

Global LCD Panel Exchange Center www.panelook.com 屏库:全球液晶屏交易中心

Product Specification

AU OPTRONICS CORPORATION

B141EW04 V4

Contents
Record of Revision

1. Handling Precautions 4
2. General Description 5
2.1 General Specification 5
2.2 Optical Characteristics 6
3. Functional Block Diagram 11
4. Absolute Maximum Ratings 12
4.1 Absolute Ratings of TFT LCD Module 12
4.2 Absolute Ratings of Backlight Unit 12
4.3 Absolute Ratings of Environment 12
5. Electrical characteristics 13
5.1 TFT LCD Module 13
5.2 Backlight Unit 15
6. Signal Characteristic 17
6.1 Pixel Format Image 17
6.2 The input data format 18
6.3 Signal Description/Pin Assignment 19
6.4 Interface Timing 21
7. Connector Description 23
7.1 TFT LCD Module 23
7.2 Backlight Unit 23
7.3 Signal for Lamp connector 23
8. Vibration and Shock Test 24
8.1 Vibration Test 24
8.2 Shock Test Spec: 24
9. Reliability 25
10. Mechanical Characteristics 26
10.1 LCM Outline Dimension 26
11. Shipping and Package 29
11.1 Shipping Label Format 29
11.2. Carton package 30
11.3 Shipping package of palletizing 31
12. Appendix: EDID description 32

www.panelook.com

One step solution for LCD / PDP / OLED panel application: Datasheet, inventory and accessory! www.panelook.com

Global LCD Panel Exchange Center www.panelook.com 屏库:全球液晶屏交易中心

Product Specification

AU OPTRONICS CORPORATION

B141EW04 V4

Version and Date	Page	Old description	New Description	Remark
0.1 2007/01/15	All	First Edition for Customer		
0.2 2007/02/27	26	LCM outline dimension	Tape position modify	
0.3 2007/03/22	21		Timing characteristics update	
	32	Column 36:EA, Column7F:C2	Column 36:EE, Column7F:BE	
0.4 2007/05/08	1	Preliminary Specifications	Final Specifications	
	1	Model Name B141EW04 V4	B141EW04 V4 (H/W : 2A)	
0.5 2008/05/15	29		Add China RoHS 15	
0.6 2008/06/25	5 6 15 26	2.1 Surface Treatment 2.2 Optical Characteristics 5.2 Backlight Unit 10.1 LCM Outline Dimension	Haze 25,Reflection value 4.7 Color / Chromaticity Add Max. modify outline Dimension	

www.panelook.com

One step solution for LCD / PDP / OLED panel application: Datasheet, inventory and accessory! www.panelook.com

Global LCD Panel Exchange Center www.panelook.com 屏库:全球液晶屏交易中心

1. Handling Precautions

1) Since front polarizer is easily damaged, pay attention not to scratch it.
2) Be sure to turn off power supply when inserting or disconnecting from input connector.
3) Wipe off water drop immediately. Long contact with water may cause discoloration or spots.
4) When the panel surface is soiled, wipe it with absorbent cotton or other soft cloth.
5) Since the panel is made of glass, it may break or crack if dropped or bumped on hard surface.
6) Since CMOS LSI is used in this module, take care of static electricity and insure human earth when handling.
7) Do not open nor modify the Module Assembly.
8) Do not press the reflector sheet at the back of the module to any directions.
9) In case if a Module has to be put back into the packing container slot after once it was taken out from the container, do not press the center of the CCFL Reflector edge. Instead, press at the far ends of the CFL Reflector edge softly. Otherwise the TFT Module may be damaged.
10) At the insertion or removal of the Signal Interface Connector, be sure not to rotate nor tilt the Interface Connector of the TFT Module.
11) After installation of the TFT Module into an enclosure (Notebook PC Bezel, for example), do not twist nor bend the TFT Module even momentary. At designing the enclosure, it should be taken into consideration that no bending/twisting forces are applied to the TFT Module from outside. Otherwise the TFT Module may be damaged.
12) Cold cathode fluorescent lamp in LCD contains a small amount of mercury. Please follow local ordinances or regulations for disposal.
13) Small amount of materials having no flammability grade is used in the LCD module. The LCD module should be supplied by power complied with requirements of Limited Power Source(, IEC60950 or UL1950), or be applied exemption.
14) The LCD module is designed so that the CCFL in it is supplied by Limited Current Circuit(IEC60950 or UL1950). Do not connect the CCFL in Hazardous Voltage Circuit.

One step solution for LCD / PDP / OLED panel application: Datasheet, inventory and accessory! www.panelook.com

Global LCD Panel Exchange Center www.panelook.com 屏库:全球液晶屏交易中心

2. General Description

B141EW04 V4 is a Color Active Matrix Liquid Crystal Display composed of a TFT LCD panel, a driver circuit, and backlight system. The screen format is intended to support the WXGA (1280(H) x 800(V)) screen and 262k colors (RGB 6-bits data driver). All input signals are LVDS interface compatible. Inverter of backlight is not included.

B141EW04 V4 is designed for a display unit of notebook style personal computer and industrial machine.

2.1 General Specification

The following items are characteristics summary on the table at 25 ℃ condition:

Items	Unit	Specifications
Screen Diagonal	[mm]	357.7 (14.1 W")
Active Area	[mm]	303.36(H) x 189.6 (V)
Pixels H x V		1280x3(RGB) x 800
Pixel Pitch	[mm]	0.237
Pixel Arrangement		R.G.B. Vertical Stripe
Display Mode		Normally White
White Luminance (ICCFL=6.0mA) Note: ICCFL is lamp current	[cd/m^2]	200 Typ. (5 points average) 170 Min. (5 points average) (Note1)
Luminance Uniformity		1.3 max. (5 points)
Contrast Ratio		500:1 Typ.,300:1 Min.
Optical Rise Time/Fall Time	[msec]	16 Typ., 25 Max.
Nominal Input Voltage VDD	[Volt]	+3.3 Typ.
Power Consumption	[Watt]	5.2 Typ
Weight	[Grams]	400 g Typ., 420g Max.
Physical Size	[mm]	320 max. (W) x 206 max. (H) x 5.5 max.(T).
Electrical Interface		R/G/B Data, 3 Sync, Signals, Clock (4 pairs LVDS)
Surface Treatment		Hard coating 3H, Glare type,Haze 25,Reflction type Normal,Reflection value 4.7
Support Color		262K colors (RGB 6-bit)
Temperature Range Operating Storage (Non-Operating)	 [°C] [°C]	 0 to +50 -20 to +60
RoHS Compliance		RoHS Compliance

One step solution for LCD / PDP / OLED panel application: Datasheet, inventory and accessory! www.panelook.com

Global LCD Panel Exchange Center www.panelook.com 屏库:全球液晶屏交易中心

2.2 Optical Characteristics

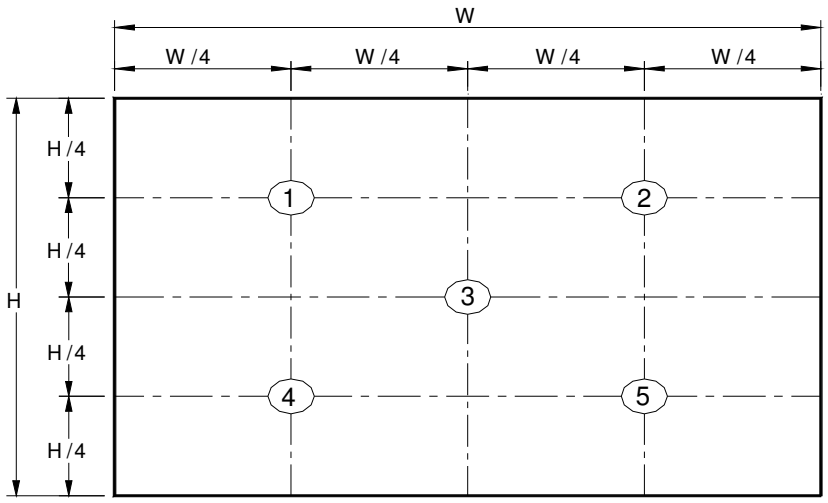
The optical characteristics are measured under stable conditions at 25℃ (Room Temperature):

Item	Unit	Conditions	Min.	Typ.	Max.	Note
White Luminance I_{CCFL}=6.0mA	[cd/m^2]	5 points average	170	200	-	1, 4, 5.
Viewing Angle	[degree]	Horizontal (Right) CR = 10	40	45	-	9
	[degree]	(Left)	40	45	-	
	[degree]	Vertical (Upper) CR = 10	10	20	-	
	[degree]	(Lower)	30	35	-	
Luminance Uniformity		5 Points		1.25	1.30	1
Luminance Uniformity		13 Points			1.53	2
CR: Contrast Ratio			300	500	-	6
Cross talk	%				1.4	7
Response Time	[msec]	Rising	-	5	8	8
	[msec]	Falling	-	11	17	
	[msec]	Rising + Falling		16	25	
Color / Chromaticity Coordinates (CIE 1931)		Red x	0.545	0.575	0.605	
		Red y	0.305	0.335	0.365	
		Green x	0.285	0.315	0.345	
		Green y	0.520	0.550	0.580	
		Blue x	0.125	0.155	0.185	
		Blue y	0.105	0.135	0.165	
		White x	0.285	0.313	0.341	
		White y	0.309	0.329	0.349	

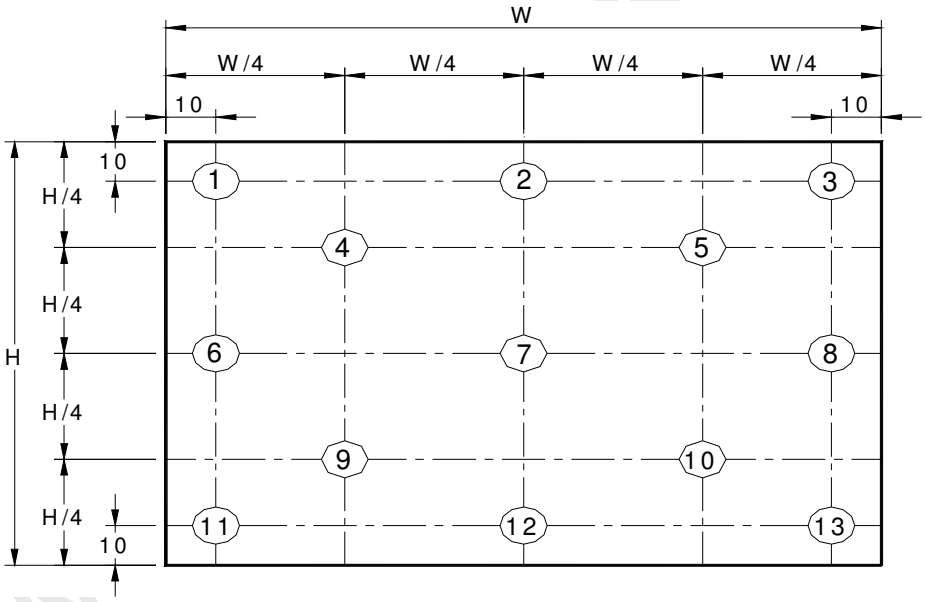
Note 1: 5 points position (Display area : 303.7 (H) x 189.8(V)mm)

One step solution for LCD / PDP / OLED panel application: Datasheet, inventory and accessory! www.panelook.com

Global LCD Panel Exchange Center www.panelook.com 屏库:全球液晶屏交易中心



Note 2: 13 points position



Note 3: The luminance uniformity of 5 and 13 points is defined by dividing the maximum luminance values by the minimum test point luminance

$$\delta_{W5} = \frac{\text{Maximum Brightness of five points}}{\text{Minimum Brightness of five points}}$$

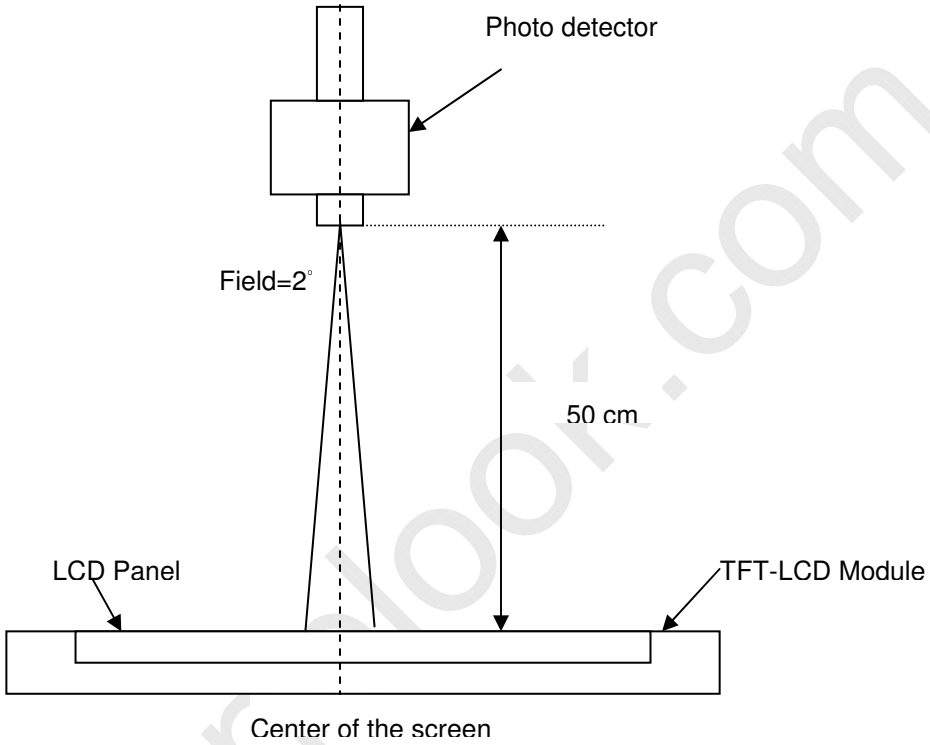
$$\delta_{W13} = \frac{\text{Maximum Brightness of thirteen points}}{\text{Minimum Brightness of thirteen points}}$$

One step solution for LCD / PDP / OLED panel application: Datasheet, inventory and accessory! www.panelook.com

Global LCD Panel Exchange Center www.panelook.com 屏库:全球液晶屏交易中心

Note 4: Measurement method

The LCD module should be stabilized at given temperature for 30 minutes to avoid abrupt temperature change during measuring. In order to stabilize the luminance, the measurement should be executed after lighting Backlight for 30 minutes in a stable, windless and dark room.



Note 5： Definition of Average Luminance of White (Y_L):

Measure the luminance of gray level 63 at 5 points，Y_L = [L (1)+ L (2)+ L (3)+ L (4)+ L (5)] / 5

L (x) is corresponding to the luminance of the point X at Figure in Note (1).

Note 6： Definition of contrast ratio:

Contrast ratio is calculated with the following formula.

$$\text{Contrast ratio (CR)} = \frac{\text{Brightness on the “White” state}}{\text{Brightness on the “Black” state}}$$

One step solution for LCD / PDP / OLED panel application: Datasheet, inventory and accessory! www.panelook.com

Global LCD Panel Exchange Center www.panelook.com 屏库:全球液晶屏交易中心

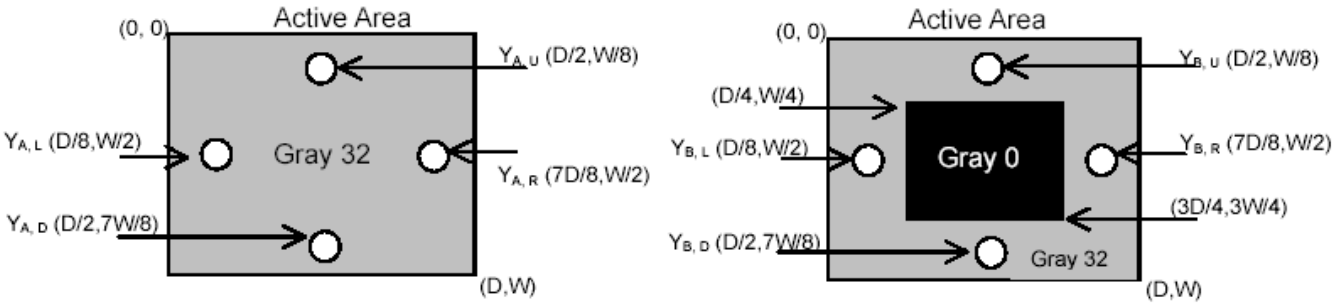
Note 7： Definition of Cross Talk (CT)

CT = | Y_B – Y_A | / Y_A × 100 (%)

Where

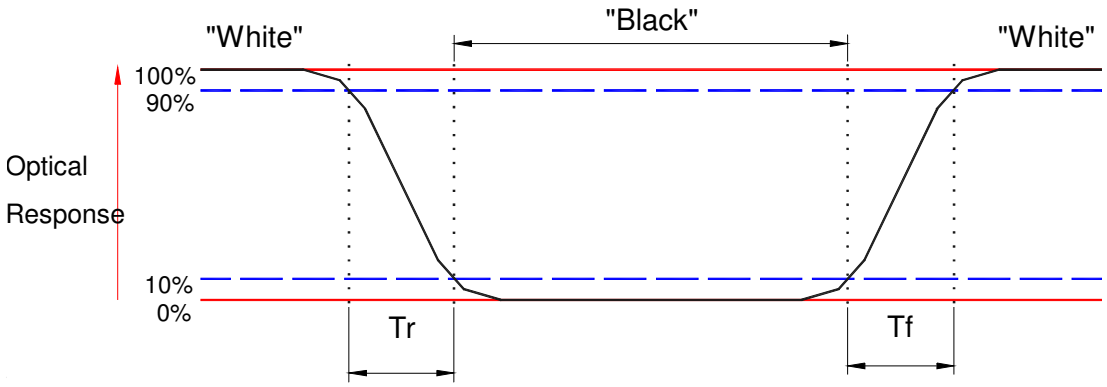
Y_A = Luminance of measured location without gray level 0 pattern (cd/m2)

Y_B = Luminance of measured location with gray level 0 pattern (cd/m2)



Note 8: Definition of response time:

The output signals of BM-7 or equivalent are measured when the input signals are changed from “Black” to “White” (falling time) and from “White” to “Black” (rising time), respectively. The response time interval between the 10% and 90% of amplitudes. Refer to figure as below.

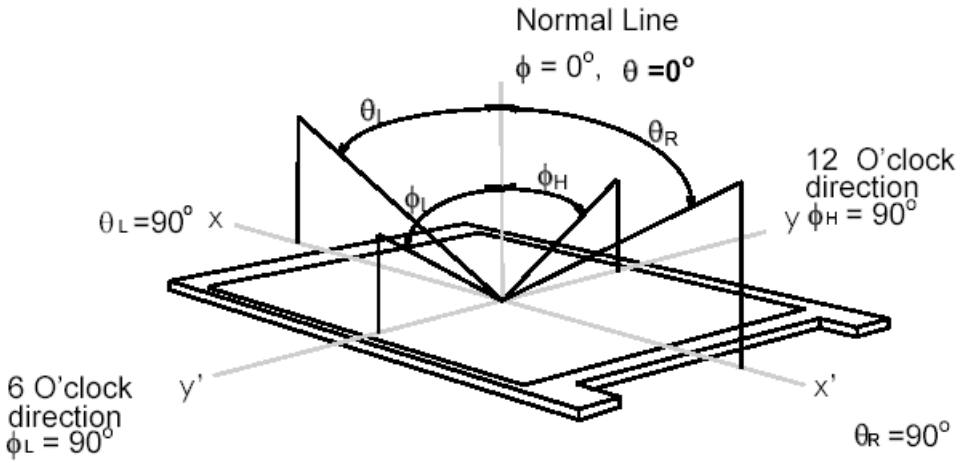


One step solution for LCD / PDP / OLED panel application: Datasheet, inventory and accessory! www.panelook.com

Global LCD Panel Exchange Center www.panelook.com 屏库:全球液晶屏交易中心

Note 9. Definition of viewing angle

Viewing angle is the measurement of contrast ratio ≧10, at the screen center, over a 180° horizontal and 180° vertical range (off-normal viewing angles). The 180° viewing angle range is broken down as follows; 90° (θ) horizontal left and right and 90° (Φ) vertical, high (up) and low (down). The measurement direction is typically perpendicular to the display surface with the screen rotated about its center to develop the desired measurement viewing angle.

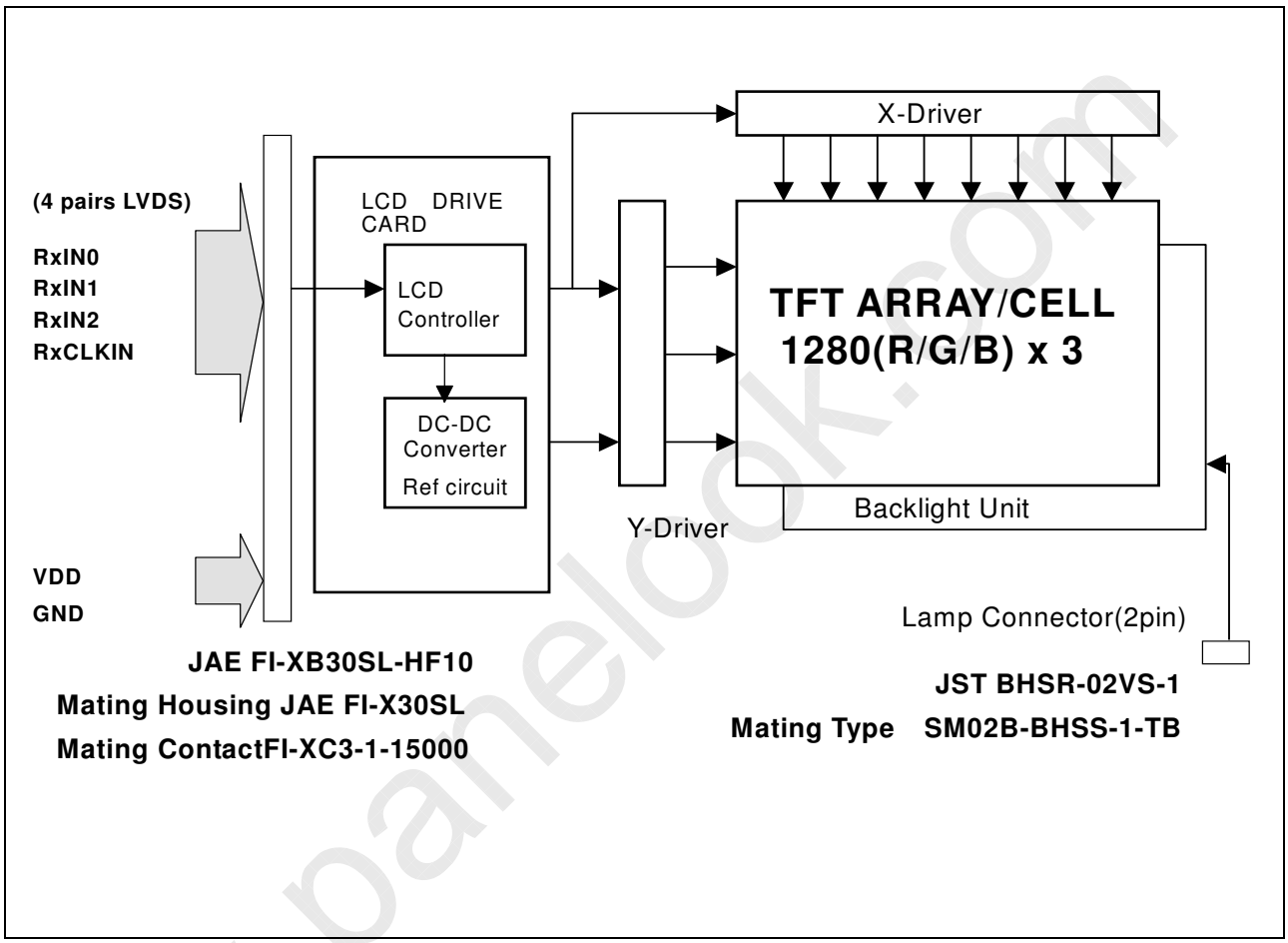


One step solution for LCD / PDP / OLED panel application: Datasheet, inventory and accessory! www.panelook.com

Global LCD Panel Exchange Center www.panelook.com 屏库:全球液晶屏交易中心

3. Functional Block Diagram

The following diagram shows the functional block of the 14. 1inches wide Color TFT/LCD Module:



www.panelook.com

One step solution for LCD / PDP / OLED panel application: Datasheet, inventory and accessory! www.panelook.com

Global LCD Panel Exchange Center www.panelook.com 屏库:全球液晶屏交易中心

4. Absolute Maximum Ratings

Absolute maximum ratings of the module is as following:

4.1 Absolute Ratings of TFT LCD Module

Item	Symbol	Min	Max	Unit	Conditions
Logic/LCD Drive Voltage	VDD	-0.3	+ 4.0	[Volt]	Note 1,2

4.2 Absolute Ratings of Backlight Unit

Item	Symbol	Min	Max	Unit	Conditions
CCFL Current	ICFL	3.0	6.5	[mA] rms	Note 1,2

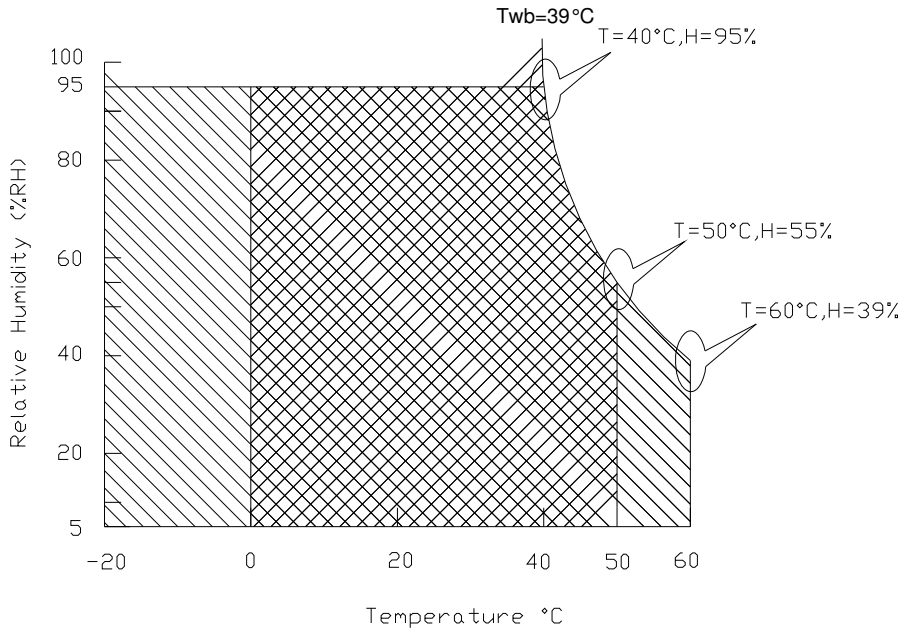
4.3 Absolute Ratings of Environment

Item	Symbol	Min	Max	Unit	Conditions
Operating Temperature	TOP	0	+50	[°C]	Note 3
Operation Humidity	HOP	5	95	[%RH]	Note 3
Storage Temperature	TST	-20	+60	[°C]	Note 3
Storage Humidity	HST	5	95	[%RH]	Note 3

Note 1: At Ta (25℃)

Note 2: Permanent damage to the device may occur if exceed maximum values

Note 3: For quality performance, please refer to AUO IIS(Incoming Inspection Standard).



Operating Range Storage Range

One step solution for LCD / PDP / OLED panel application: Datasheet, inventory and accessory! www.panelook.com

Global LCD Panel Exchange Center www.panelook.com 屏库:全球液晶屏交易中心

5. Electrical characteristics

5.1 TFT LCD Module

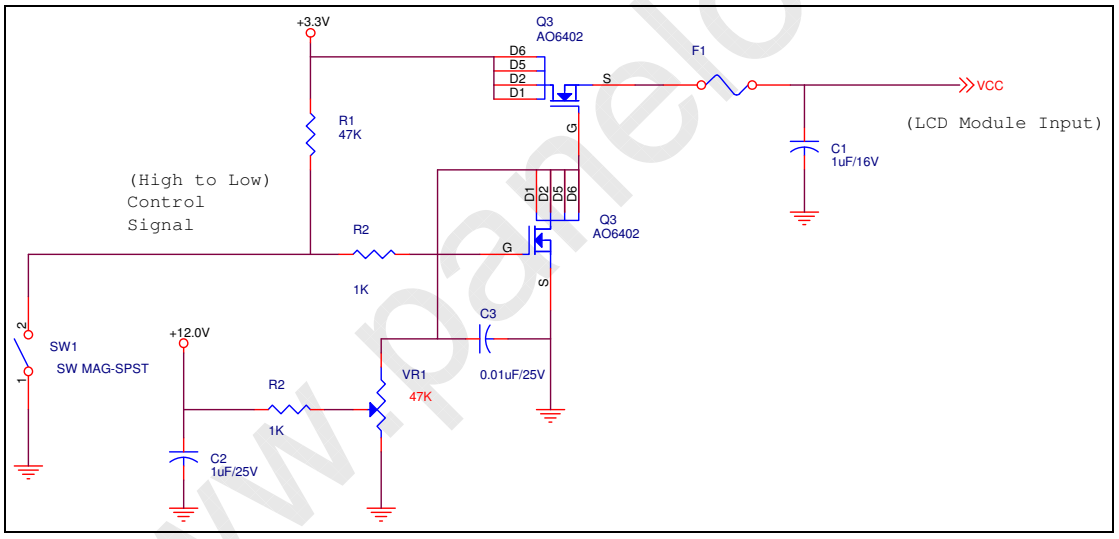
5.1.1 Power Specification

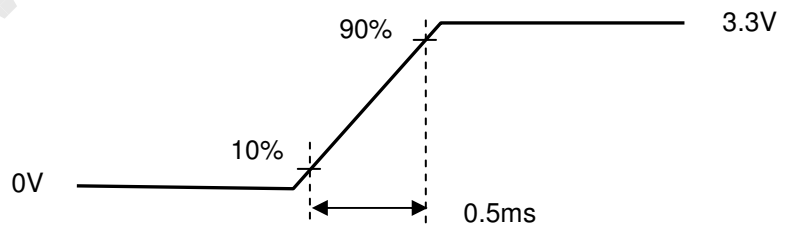
Input power specifications are as follows;

Symble	Parameter	Min	Typ	Max	Units	Note
VDD	Logic/LCD Drive Voltage	3.0	3.3	3.6	[Volt]	
PDD	VDD Power		1.0.		[Watt]	Note 1
IDD	IDD Current		331		[mA]	Note 1
IRush	Inrush Current		810	1500	[mA]	Note 2
VDDrp	Allowable Logic/LCD Drive Ripple Voltage			100	[mV] p-p	

Note 1 : Maximum Measurement Condition : Black Patterm

Note 2 : Measure Condition





Vin rising time

One step solution for LCD / PDP / OLED panel application: Datasheet, inventory and accessory! www.panelook.com

Global LCD Panel Exchange Center www.panelook.com 屏库:全球液晶屏交易中心

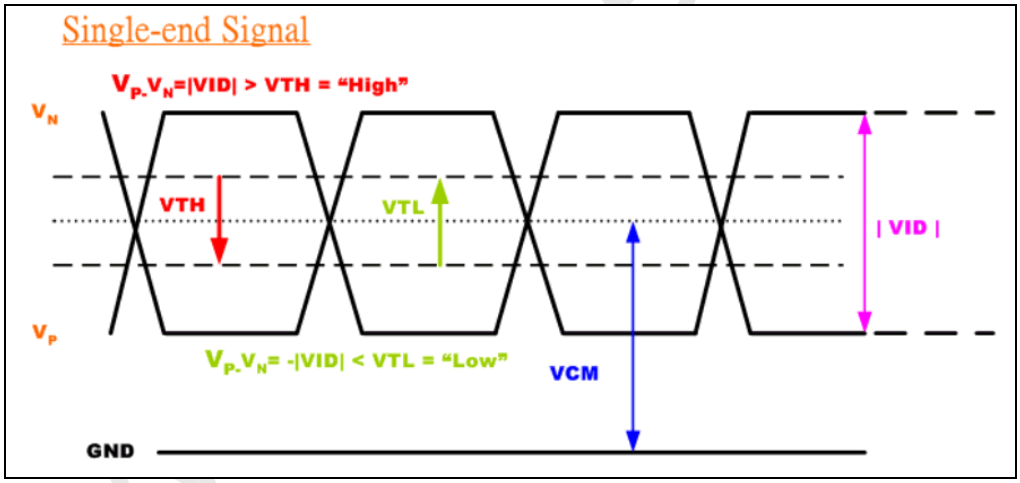
5.1.2 Signal Electrical Characteristics

Input signals shall be low or High-impedance state when VDD is off.

Signal electrical characteristics are as follows;

Parameter	Condition	Min	Max	Unit
Vth	Differential Input High Threshold (Vcm=+1.2V)		100	[mV]
Vtl	Differential Input Low Threshold (Vcm=+1.2V)	-100		[mV]
Vcm	Differential Input Common Mode Voltage	1.125	1.375	[V]

Note: LVDS Differential Voltage



One step solution for LCD / PDP / OLED panel application: Datasheet, inventory and accessory! www.panelook.com

Global LCD Panel Exchange Center www.panelook.com 屏库:全球液晶屏交易中心

5.2 Backlight Unit

Parameter guideline for CCFL Inverter

Parameter	Min	Typ	Max	Units	Condition
White Luminance 5 points average	170	200	-	[cd/m^2]	(Ta=25℃)
CCFL current(ICCFL)	3.0	6.0	6.5	[mA] rms	(Ta=25℃) Note 2
CCFL Frequency(FCCFL)	50	55	60	[KHz]	(Ta=25℃) Note 3,4
CCFL Ignition Voltage(Vs)			1560	[Volt] rms	(Ta= 0℃) Note 5
CCFL Ignition Voltage(Vs)			1370	[Volt] rms	(Ta= 25℃) Note 5
CCFL discharge time (sec)	1				(Ta= 25℃) Note 4
CCFL Voltage (Reference) (VCCFL)	612	680	748	[Volt] rms	(Ta=25℃) Note 6
CCFL Power consumption (PCCFL)	-	4.2	4.9	[Watt]	(Ta=25℃) Note 6

Note 1: Typ are AUO recommended Design Points.

*1 All of characteristics listed are measured under the condition using the AUO Test inverter.

*2 In case of using an inverter other than listed, it is recommended to check the inverter carefully. Sometimes, interfering noise stripes appear on the screen, and substandard luminance or flicker at low power may happen.

*3 In designing an inverter, it is suggested to check safety circuit very carefully. Impedance of CCFL, for instance, becomes more than 1 [M ohm] when CFL is damaged.

*4 Generally, CCFL has some amount of delay time after applying kick-off voltage. It is recommended to keep on applying kick-off voltage for 1 [Sec] until discharge.

*5 CCFL discharge frequency must be carefully chosen so as not to produce interfering noise stripes on the screen.

*6 Reducing CCFL current increases CCFL discharge voltage and generally increases CCFL discharge frequency. So all the parameters of an inverter should be carefully designed so as not to produce too much leakage current from high-voltage output of the inverter.

Note 2: It should be employed the inverter which has “Duty Dimming”, if ICCFL is less than 4mA.

One step solution for LCD / PDP / OLED panel application: Datasheet, inventory and accessory! www.panelook.com

Global LCD Panel Exchange Center www.panelook.com 屏库:全球液晶屏交易中心

Note 3: CCFL discharge frequency should be carefully determined to avoid interference between inverter and TFT LCD.

Note 4: The frequency range will not affect to lamp life and reliability characteristics.

Note 5: CCFL inverter should be able to give out a power that has a generating capacity of over 1,430 voltage. Lamp units need 1,400 voltage minimum for ignition.

Note 6: Calculator value for reference ($I_{CCFL} \times V_{CCFL} = P_{CCFL}$)

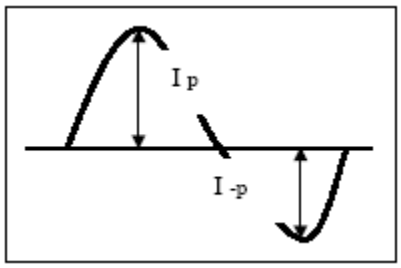
Note 7: Requirements for a system inverter design, which is intended to have a better display performance, a better power efficiency and a more reliable lamp, are following.

It shall help increase the lamp lifetime and reduce leakage current.

a. The asymmetry rate of the inverter waveform should be less than 10%.

b. The distortion rate of the waveform should bewithin $\sqrt{2}$ ±10%.

* Inverter output waveform had better be more similar to ideal sine wave.



* Asymmetry rate:

$| I_p - I_{-p} | / I_{rms} * 100\%$

* Distortion rate

I_p (or I_{-p}) / I_{rms}

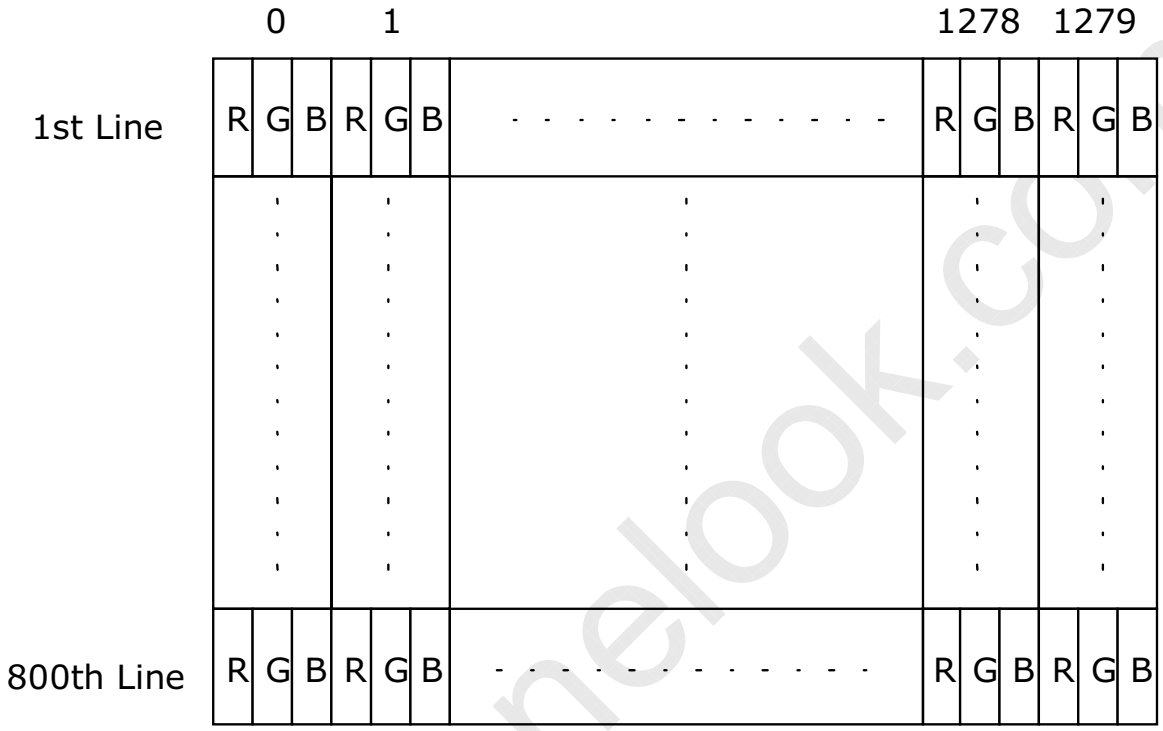
One step solution for LCD / PDP / OLED panel application: Datasheet, inventory and accessory! www.panelook.com

Global LCD Panel Exchange Center www.panelook.com 屏库:全球液晶屏交易中心

6. Signal Characteristic

6.1 Pixel Format Image

Following figure shows the relationship of the input signals and LCD pixel format.

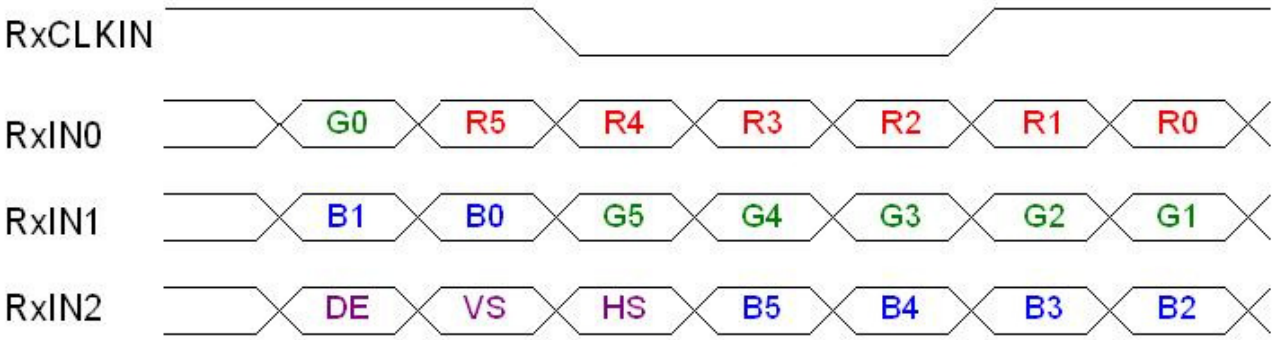


www.panelook.com

One step solution for LCD / PDP / OLED panel application: Datasheet, inventory and accessory! www.panelook.com

Global LCD Panel Exchange Center www.panelook.com 屏库:全球液晶屏交易中心

6.2 The input data format



Signal Name	Description	
+R5 +R4 +R3 +R2 +R1 +R0	Red Data 5 (MSB) Red Data 4 Red Data 3 Red Data 2 Red Data 1 Red Data 0 (LSB) Red-pixel Data	Red-pixel Data Each red pixel's brightness data consists of these 6 bits pixel data.
+G5 +G4 +G3 +G2 +G1 +G0	Green Data 5 (MSB) Green Data 4 Green Data 3 Green Data 2 Green Data 1 Green Data 0 (LSB) Green-pixel Data	Green-pixel Data Each green pixel's brightness data consists of these 6 bits pixel data.
+B5 +B4 +B3 +B2 +B1 +B0	Blue Data 5 (MSB) Blue Data 4 Blue Data 3 Blue Data 2 Blue Data 1 Blue Data 0 (LSB) Blue-pixel Data	Blue-pixel Data Each blue pixel's brightness data consists of these 6 bits pixel data.
RxCLKIN	Data Clock	The typical frequency is 68.94 MHZ.. The signal is used to strobe the pixel data and DE signals. All pixel data shall be valid at the falling edge when the DE signal is high.
DE	Display Timing	This signal is strobed at the falling edge of RxCLKIN. When the signal is high, the pixel data shall be valid to be displayed.
VS	Vertical Sync	The signal is synchronized to RxCLKIN .
HS	Horizontal Sync	The signal is synchronized to RxCLKIN .

Note: Output signals from any system shall be low or High-impedance state when VDD is off.

One step solution for LCD / PDP / OLED panel application: Datasheet, inventory and accessory! www.panelook.com

Global LCD Panel Exchange Center www.panelook.com 屏库:全球液晶屏交易中心

6.3 Signal Description/Pin Assignment

LVDS is a differential signal technology for LCD interface and high speed data transfer device.

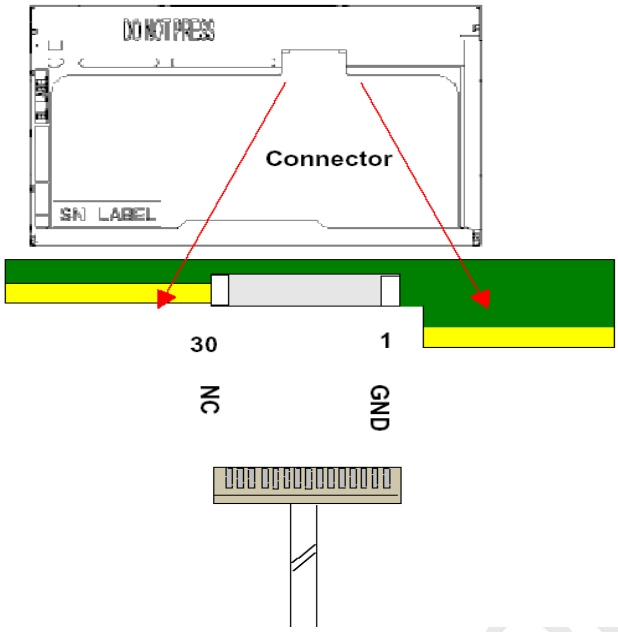
Pin#	Signal Name	Pin#	Signal Name
1	GND	2	VDD
3	VDD	4	V_{EDID}
5	Aging	6	CLK_{EDID}
7	$DATA_{EDID}$	8	RxIN0-
9	RxIN0+	10	GND
11	RxIN1-	12	RxIN1+
13	GND	14	RxIN2-
15	RxIN2+	16	GND
17	RxCLKIN-	18	RxCLKIN+
19	GND	20	NC
21	NC	22	GND
23	NC	24	NC
25	GND	26	NC
27	NC	28	GND
29	NC	30	NC

www.panelook.com

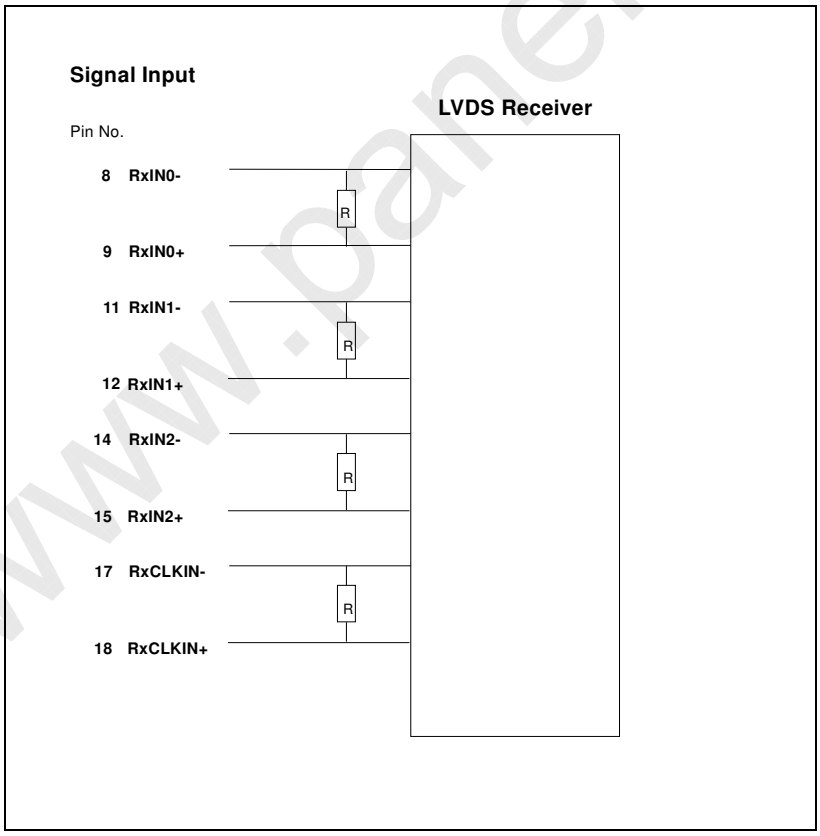
One step solution for LCD / PDP / OLED panel application: Datasheet, inventory and accessory! www.panelook.com

Global LCD Panel Exchange Center www.panelook.com 屏库:全球液晶屏交易中心

Note1: Start from right side



Note2: Input signals shall be low or High-impedance state when VDD is off.
internal circuit of LVDS inputs are as following.
The module uses a 100ohm resistor between positive and negative data lines of each receiver input



One step solution for LCD / PDP / OLED panel application: Datasheet, inventory and accessory! www.panelook.com

Global LCD Panel Exchange Center www.panelook.com 屏库:全球液晶屏交易中心

6.4 Interface Timing

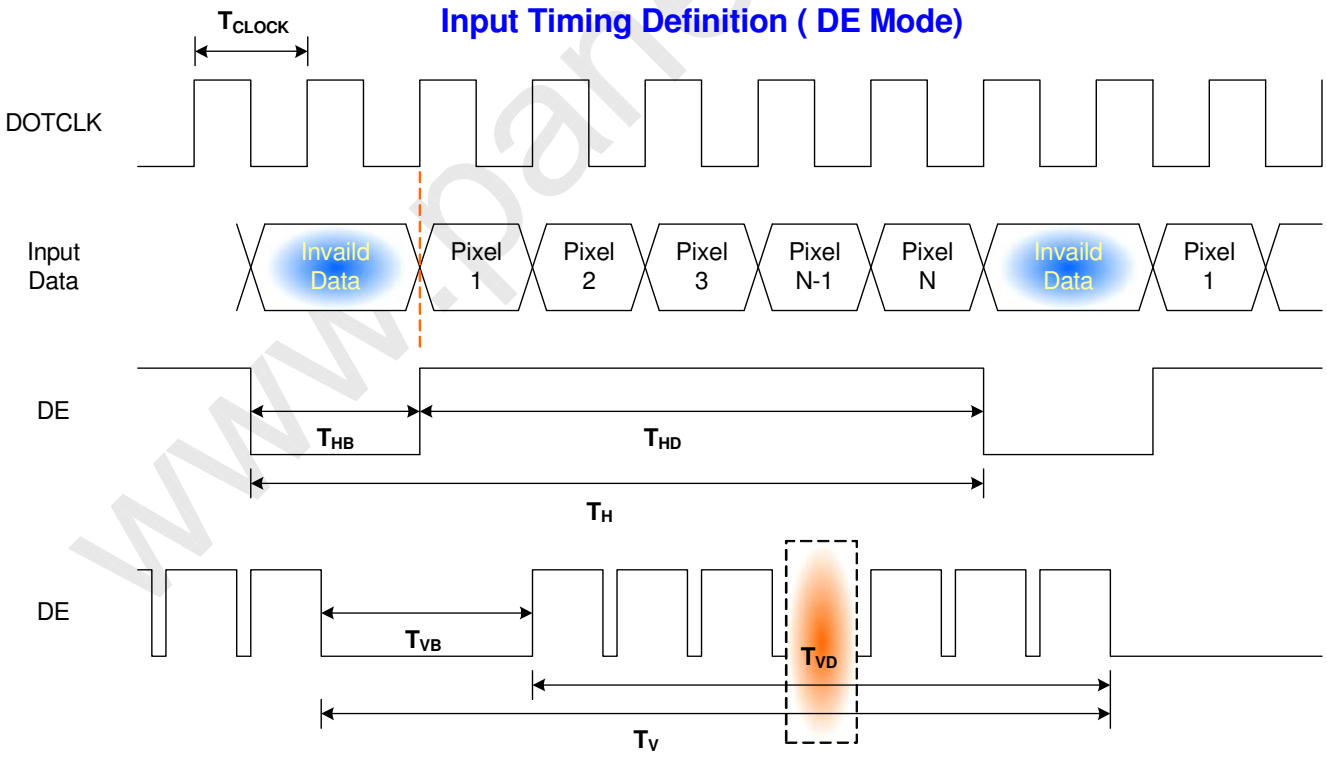
6.4.1 Timing Characteristics

Basically, interface timings should match the 1280x800 /60Hz manufacturing guide line timing.

Parameter		Symbol	Min.	Typ.	Max.	Unit
Frame Rate		-		60	-	Hz
Clock frequency		1/ T_{Clock}		68.94		MHz
Vertical Section	Period	T_V	803	816	1023	T_{Line}
	Active	T_{VD}	800	800	800	
	Blanking	T_{VB}	3	16	223	
Horizontal Section	Period	T_H	1303	1408	2047	T_{Clock}
	Active	T_{HD}	1280	1280	1280	
	Blanking	T_{HB}	23	128	767	

Note : DE mode only

6.4.2 Timing diagram



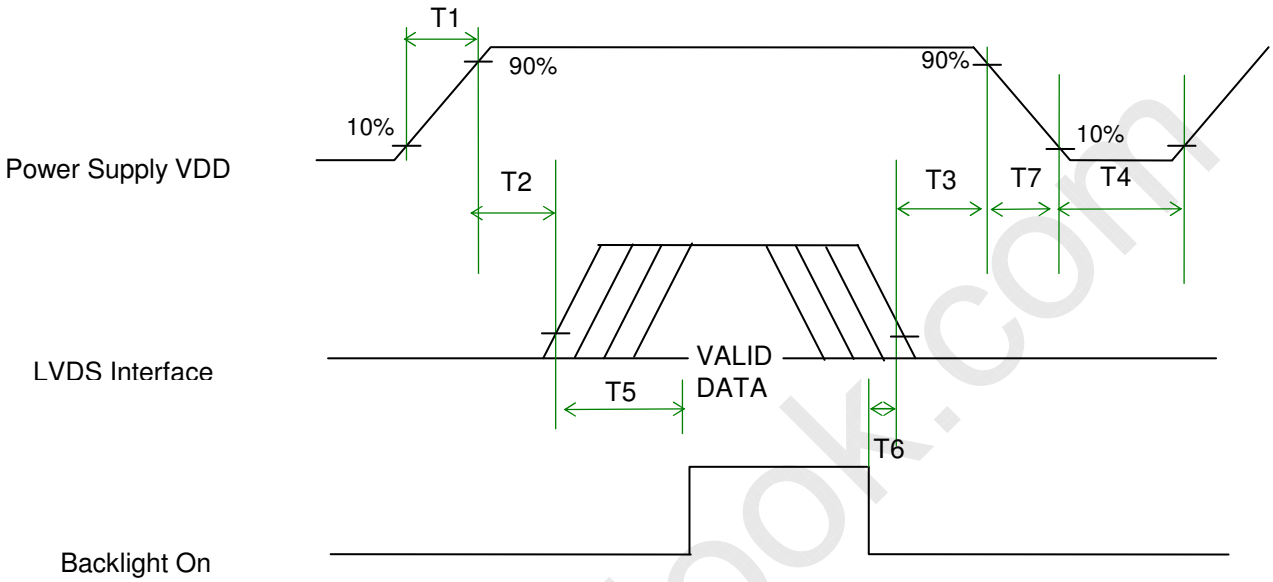
www.panelook.com

One step solution for LCD / PDP / OLED panel application: Datasheet, inventory and accessory! www.panelook.com

Global LCD Panel Exchange Center www.panelook.com 屏库:全球液晶屏交易中心

6.5 Power ON/OFF Sequence

VDD power and lamp on/off sequence is as follows. Interface signals are also shown in the chart. Signals from any system shall be Hi-Z state or low level when VDD is off.



Power Sequence Timing

Parameter	Value			Units
	Min.	Typ.	Max.	
T1	0.5	-	10	(ms)
T2	0	-	50	(ms)
T3	0	-	50	(ms)
T4	400	-	-	(ms)
T5	200	-	-	(ms)
T6	200	-	-	(ms)
T7	0	-	10	(ms)

www.panelook.com

One step solution for LCD / PDP / OLED panel application: Datasheet, inventory and accessory! www.panelook.com

Global LCD Panel Exchange Center www.panelook.com 屏库:全球液晶屏交易中心

7. Connector Description

Physical interface is described as for the connector on module.

These connectors are capable of accommodating the following signals and will be following components.

7.1 TFT LCD Module

Connector Name / Designation	For Signal Connector
Manufacturer	JAE/Starconn
Type / Part Number	FI-XB30SL-HF10/093M30-00B0RA-G4
Mating Housing/Part Number	F1-X30H / equivalent type
Mating Contact/Part Number	F1-XC3-1-15000 / equivalent type

7.2 Backlight Unit

Physical interface is described as for the connector on module.

These connectors are capable of accommodating the following signals and will be following components.

Connector Name / Designation	For Lamp Connector
Manufacturer	JST
Type / Part Number	BHSR-02VS-1
Mating Type / Part Number	SM02B-BHSS-1-TB

7.3 Signal for Lamp connector

Pin #	Cable color	Signal Name
1	Red	Lamp High Voltage
2	White	Lamp Low Voltage

One step solution for LCD / PDP / OLED panel application: Datasheet, inventory and accessory! www.panelook.com

Global LCD Panel Exchange Center www.panelook.com 屏库:全球液晶屏交易中心

8. Vibration and Shock Test

8.1 Vibration Test

Test Spec:

- Test method: Non-Operation
- Acceleration: 1.5G , sine wave
- Frequency: 10 - 500Hz Random
- Sweep: 0.5 octave/minute in each of three mutually perpendicular axes.

8.2 Shock Test Spec:

Test Spec:

- Test method: Non-Operation
- Acceleration: 240 G , Half sine wave
- Active time: 2 ms
- Pulse: Half sine wave

www.panelook.com

One step solution for LCD / PDP / OLED panel application: Datasheet, inventory and accessory! www.panelook.com

Global LCD Panel Exchange Center www.panelook.com 屏库:全球液晶屏交易中心

9. Reliability

Items	Required Condition	Note
Temperature Humidity Bias	40℃/90%,300Hr	
High Temperature Operation	50℃/20%,300Hr	
Low Temperature Operation	0℃,300Hr	
On/Off Test	25℃, ON/10 sec. OFF/10sec., 30,000 cycles	
Hot Storage	60℃/20% RH ,300 hours	
Cold Storage	-20℃/50% RH ,300 hours	
Thermal Shock Test	-20℃/30 min ,60℃/30 min 100cycles	
Hot Start Test	50℃/1 Hr min. power on/off per 5 minutes, 5 times	
Cold Start Test	0℃/1 Hr min. power on/off per 5 minutes, 5 times	
Shock Test (Non-Operating)	240G, 2ms, Half-sine wave	
Vibration Test (Non-Operating)	Sinusoidal vibration, 1.5G zero-to-peak, 10 to 500 Hz, 0.5 octave/minute in each of three mutually perpendicular axes.	
ESD	Contact : ±8KV, operation, class B Air : ±15KV, operation, class B	Note 1

Note1: According to EN61000-4-2 , ESD class B: Some performance degradation allowed. No data lost . Self-recoverable. No hardware failures.

Note2: CCFL Life time: 12,000 hours minimum under normal module usage.

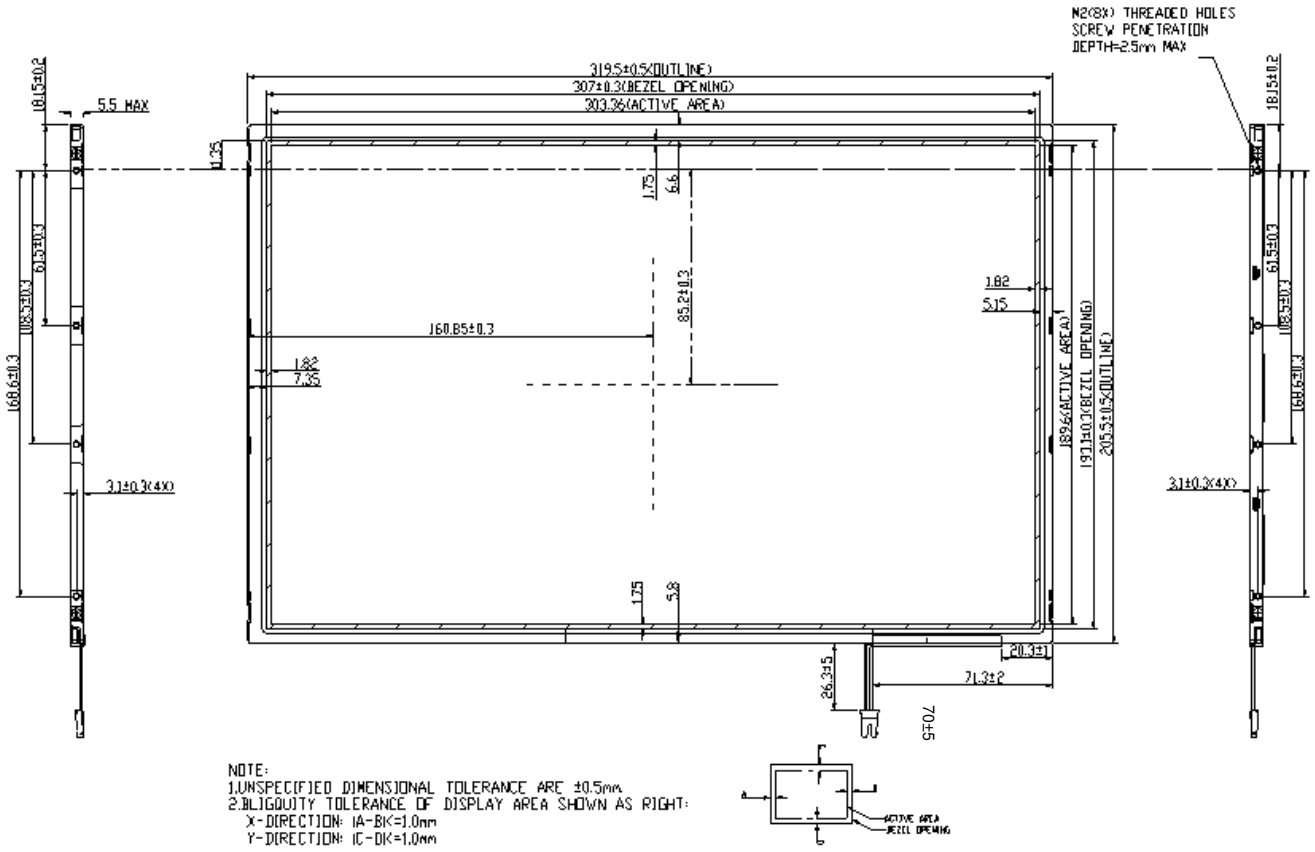
Note3: MTBF (Excluding the CCFL): 30,000 hours with a confidence level 90%

One step solution for LCD / PDP / OLED panel application: Datasheet, inventory and accessory! www.panelook.com

Global LCD Panel Exchange Center www.panelook.com 屏库:全球液晶屏交易中心

10. Mechanical Characteristics

10.1 LCM Outline Dimension



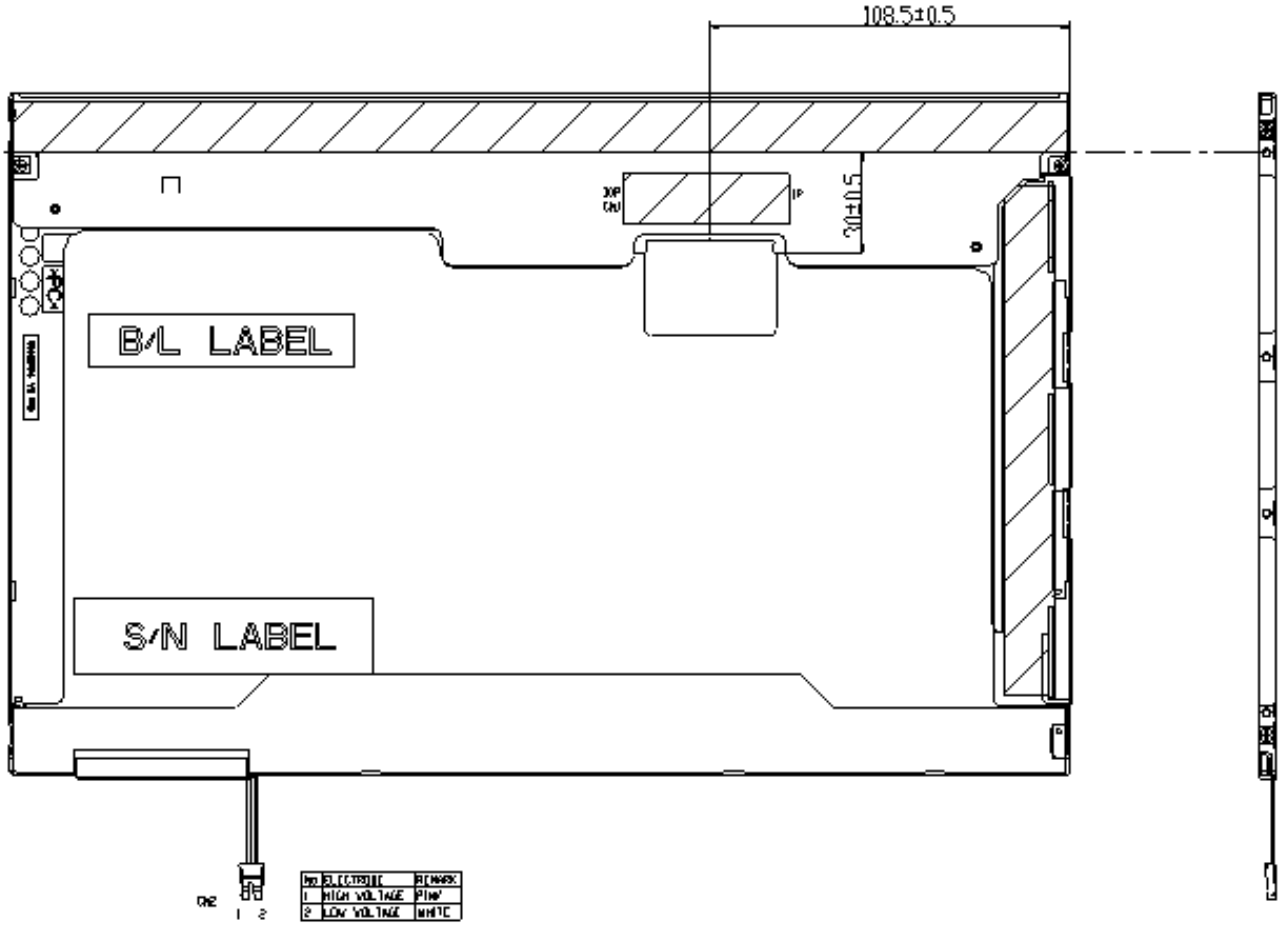
One step solution for LCD / PDP / OLED panel application: Datasheet, inventory and accessory! www.panelook.com

Global LCD Panel Exchange Center www.panelook.com 屏库:全球液晶屏交易中心

Product Specification

AU OPTRONICS CORPORATION

B141EW04 V4



NOTE :
1. CN1: THE INTERFACE CONNECTOR IS JAE FI-XB30SL-HF10.
2. CN2: THE LAMP CONNECTOR IS JST BHSR-02VS-1

One step solution for LCD / PDP / OLED panel application: Datasheet, inventory and accessory! www.panelook.com

Global LCD Panel Exchange Center www.panelook.com 屏库:全球液晶屏交易中心

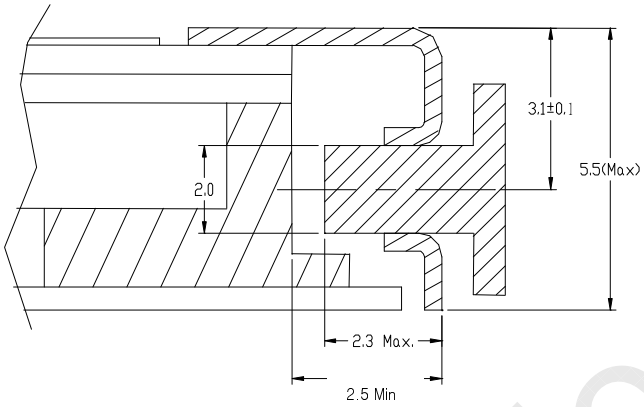
10.2 Screw Hole Depth and Center Position

Screw hole minimum depth, from side surface =2.5 mm (See drawing)

Screw hole center location, from front surface = 3.1 ± 0.1mm (See drawing)

Suggestions: Customers' Screw maximum length = 2.3 mm (See drawing)

Screw Torque: Maximum2.5 kgf-cm



www.panelook.com

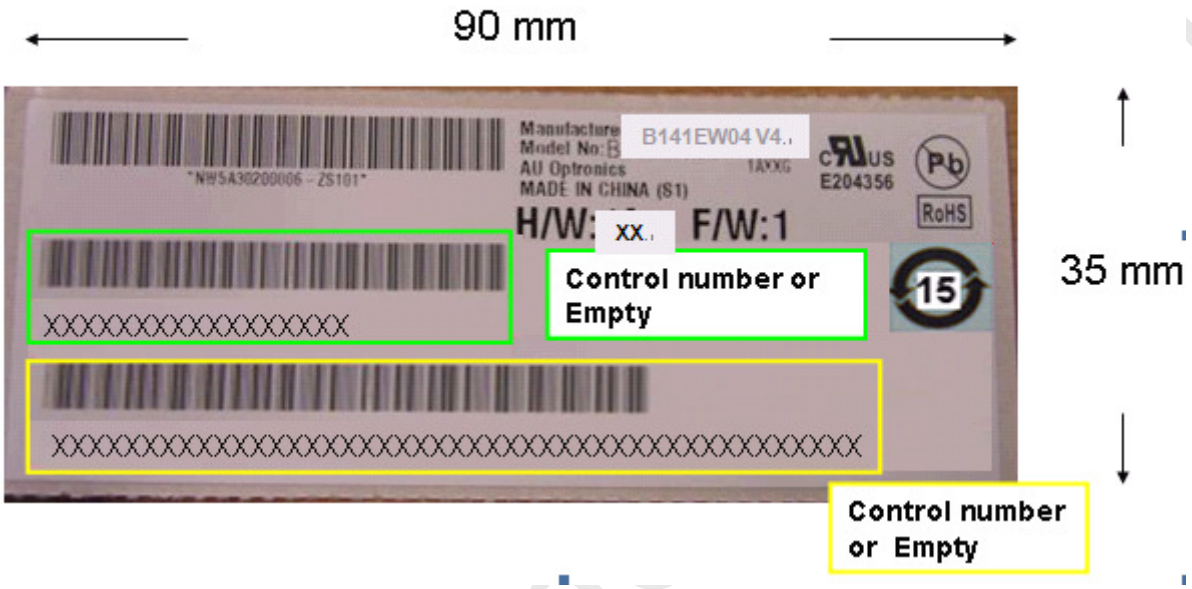
One step solution for LCD / PDP / OLED panel application: Datasheet, inventory and accessory! www.panelook.com

Global LCD Panel Exchange Center www.panelook.com 屏库:全球液晶屏交易中心

11. Shipping and Package

11.1 Shipping Label Format

– Size: 90 mm (length) x 35 mm (width)



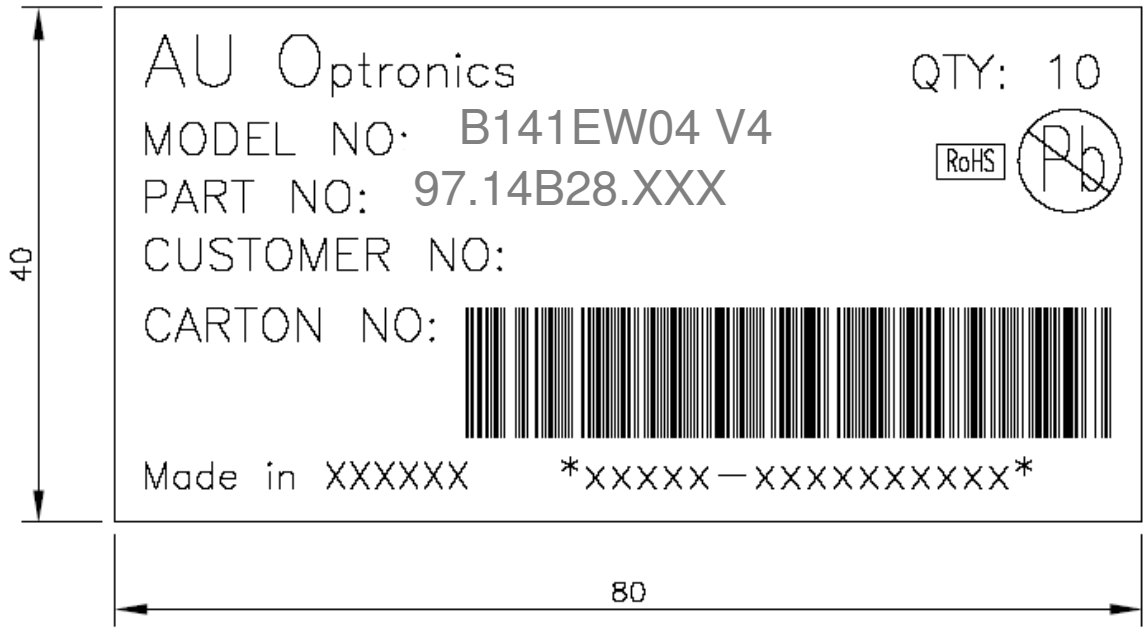
H/W	Source IC	Gate IC
1A	Raydium	NT
2A	NEC	TSB

One step solution for LCD / PDP / OLED panel application: Datasheet, inventory and accessory! www.panelook.com

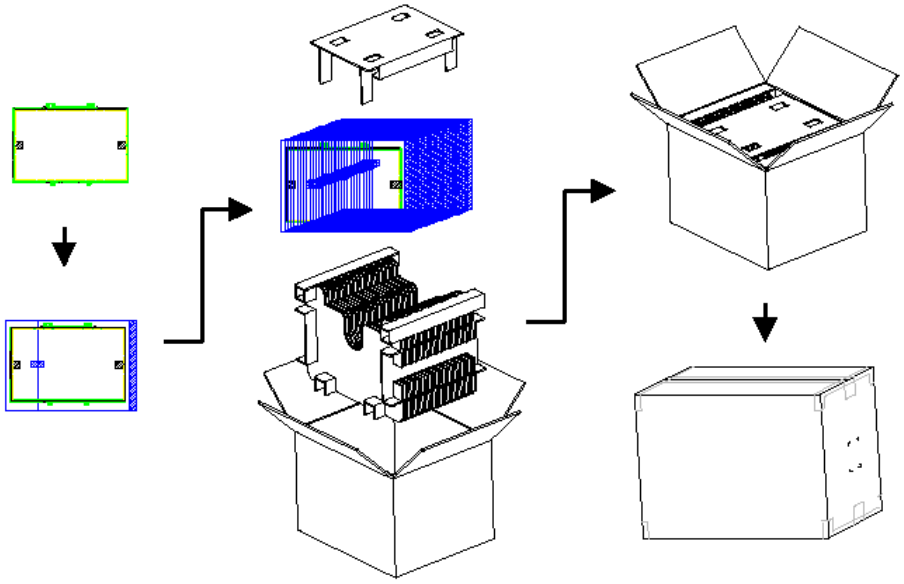
Global LCD Panel Exchange Center www.panelook.com 屏库:全球液晶屏交易中心

11.2. Carton package

Carton Label: 80mm * 40mm



The outside dimension of carton is 454(L)mm* 388(W)mm* 352(H)mm, carton and cushion weight are 2920g.

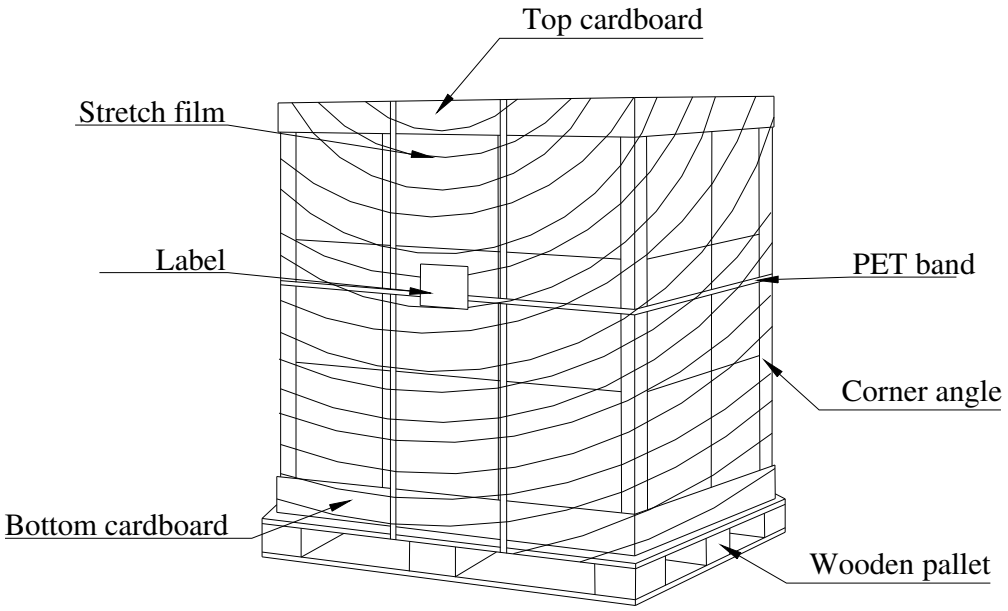


One step solution for LCD / PDP / OLED panel application: Datasheet, inventory and accessory! www.panelook.com

Global LCD Panel Exchange Center www.panelook.com 屏库:全球液晶屏交易中心

11.3 Shipping package of palletizing

By air : 6 *4 layers, one pallet put 24 boxes, total 480 pcs module.
By sea : 6 *5 layers, one pallet put 30 boxes, total 600 pcs module.



www.panelook.com

One step solution for LCD / PDP / OLED panel application: Datasheet, inventory and accessory! www.panelook.com

Global LCD Panel Exchange Center www.panelook.com 屏库:全球液晶屏交易中心

12. Appendix: EDID description

Address HEX	FUNCTION	Value HEX	Value BIN	Value DEC
00	Header	00	00000000	0
01		FF	11111111	255
02		FF	11111111	255
03		FF	11111111	255
04		FF	11111111	255
05		FF	11111111	255
06		FF	11111111	255
07		00	00000000	0
08	EISA Manuf. Code LSB	06	00000110	6
09	Compressed ASCII	AF	10101111	175
0A	Product Code=44	44	01000100	68
0B	hex, LSB first=44	44	01000100	68
0C	32-bit ser #	00	00000000	0
0D		00	00000000	0
0E		00	00000000	0
0F		00	00000000	0
10	Week of manufacture	01	00000001	1
11	Year of manufacture	10	00010000	16
12	EDID Structure Ver#=1	01	00000001	1
13	EDID revision #=3	03	00000011	3
14	Video input def. (digital I/P, non-TMDS, CRGB)	80	10000000	128
15	Max H image size (rounded to cm)	1E	00011110	30
16	Max V image size (rounded to cm)	13	00010011	19
17	Display Gamma=2.2	78	01111000	120
18	Feature support (no DPMS, Active OFF, RGB, tmg Blk#1)	0A	00001010	10
19	Red/green low bits (Lower 2:2:2:2 bits)	7F	01111111	127
1A	Blue/white low bits (Lower 2:2:2:2 bits)	E5	11100101	229
1B	Red x=0.575	93	10010011	147
1C	Red y=0.335	55	01010101	85
1D	Green x=0.315	50	01010000	80
1E	Green y=0.55	8C	10001100	140
1F	Blue x=0.155	27	00100111	39
20	Blue y=0.135	22	00100010	34
21	White x=0.313	50	01010000	80
22	White y=0.329	54	01010100	84
23		00	00000000	0
24		00	00000000	0
25		00	00000000	0
26		01	00000001	1
27		01	00000001	1

One step solution for LCD / PDP / OLED panel application: Datasheet, inventory and accessory! www.panelook.com

Global LCD Panel Exchange Center www.panelook.com 屏库:全球液晶屏交易中心

28		01	00000001	1
29		01	00000001	1
2A		01	00000001	1
2B		01	00000001	1
2C		01	00000001	1
2D		01	00000001	1
2E		01	00000001	1
2F		01	00000001	1
30		01	00000001	1
31		01	00000001	1
32		01	00000001	1
33		01	00000001	1
34		01	00000001	1
35		01	00000001	1
36	Pixel Clock/10000 LSB	EE	11101110	238
37	Pixel Clock/10000 USB	1A	00011010	26
38	Horz active Lower 8bits	00	00000000	0
39	Horz blanking Lower 8bits	80	10000000	128
3A	HorzAct:HorzBlnk Upper 4:4 bits	50	01010000	80
3B	Vertical Active Lower 8bits	20	00100000	32
3C	Vertical Blanking Lower 8bits	10	00010000	16
3D	Vert Act : Vertical Blanking (upper 4:4 bit)	30	00110000	48
3E	HorzSync. Offset	15	00010101	21
3F	HorzSync.Width	20	00100000	32
40	VertSync.Offset =3 line	35	00110101	53
41	VertSync.Offset =6 line	00	00000000	0
42	Horizontal Image Size=303.36 mm	30	00110000	48
43	Vertical Image Size=189.6 mm	BE	10111110	190
44		10	00010000	16
45		00	00000000	0
46		00	00000000	0
47		18	00011000	24
48		00	00000000	0
49		00	00000000	0
4A		00	00000000	0
4B		0F	00001111	15
4C	Version	00	00000000	0
4D		00	00000000	0
4E		00	00000000	0
4F	Link Type(LVDS Link, MSB justified)	00	00000000	0
50	Pixel and link component format(6-bit panel interface)	00	00000000	0
51	Panel features (No inverter)	00	00000000	0
52		00	00000000	0
53		00	00000000	0
54		00	00000000	0

One step solution for LCD / PDP / OLED panel application: Datasheet, inventory and accessory! www.panelook.com

Global LCD Panel Exchange Center www.panelook.com 屏库:全球液晶屏交易中心

55		00	00000000	0
56		00	00000000	0
57		00	00000000	0
58		00	00000000	0
59		20	00100000	32
5A		00	00000000	0
5B		00	00000000	0
5C		00	00000000	0
5D		FE	11111110	254
5E		00	00000000	0
5F	A	41	01000001	65
60	U	55	01010101	85
61	O	4F	01001111	79
62		0A	00001010	10
63		20	00100000	32
64		20	00100000	32
65		20	00100000	32
66		20	00100000	32
67		20	00100000	32
68		20	00100000	32
69		20	00100000	32
6A		20	00100000	32
6B		20	00100000	32
6C	Detailed timing/monitor	00	00000000	0
6D	descriptor #4	00	00000000	0
6E		00	00000000	0
6F		FE	11111110	254
70		00	00000000	0
71	B	42	01000010	66
72	1	31	00110001	49
73	4	34	00110100	52
74	1	31	00110001	49
75	E	45	01000101	69
76	W	57	01010111	87
77	0	30	00110000	48
78	4	34	00110100	52
79		20	00100000	32
7A	V	56	01010110	86
7B	4	34	00110100	52
7C		20	00100000	32
7D		0A	00001010	10
7E	Extension Flag	00	00000000	0
7F	Checksum	BE	10111110	190

One step solution for LCD / PDP / OLED panel application: Datasheet, inventory and accessory! www.panelook.com